

Claims

1. An electromagnetic coupling with a pilot clutch for activating a main clutch wherein clutch plates are thrust with a retaining ring moved by magnetic force produced by an electromagnetic coil in the pilot clutch, characterized in that:

the electromagnetic coil in the pilot clutch is surrounded with ferromagnetic material over at least two of its three facial sides other than its magnetic force exerting facial side, namely over at least its rear and outer facial sides and further that the magnetic material is covered with non-magnetic material.

2. An electromagnetic coupling as set forth in claim 1, further characterized in that at least one of said retaining ring and said clutch plate in the pilot clutch is made of ferromagnetic material.

3. An electromagnetic coupling as set forth in claim 1 or claim 2, characterized in that the ferromagnetic material is one of materials selected from the class which consists of a spherical graphite cast iron having a chemical composition containing by weight 2.7 to 3.9 % of C, 3.3 to 4.8 % of Si, 0.3 to 1.2 % of Mn, $P \leq 0.1 \%$, $S \leq 0.1 \%$, 0.01 to 0.1 % of Mg, 0.01 to 0.1 % of at least one of Ce and La and the balance Fe and having a carbon equivalent (C-E) ≥ 4.3 and a silicon steel containing by weight 2.8 to 3.3 % of Si, not greater than 1.0 % of Al, 0.1 to 0.2 % of Mn, not greater than 0.002 % of C and the balance Fe.

4. An electromagnetic coupling as set forth in claim 3, characterized in that said spherical graphite cast iron has 0.1 to 1.5 % by weight of Mo added thereto.